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EXAMINER
PENDERGRASS, KYLE M

ART UNIT	PAPER NUMBER
2624	

DATE MAILED: 02/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	09/881,442	WELLS ET AL.
	Examiner	Art Unit	
	Kyle M Pendergrass	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _____ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-43</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____ .

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____ .

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____ .

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 13, 16, 18-19, & 42 are rejected under 35 U.S.C. 102(e) as being anticipated by Koehler (US 6,619,206).

Regarding claim 13, Koehler teaches a method comprising:

seeding a toner report level **(column 13:lines 14-18, upon start-up, the ink level is updated on the display)**;

averaging a group of toner level sensor readings to produce a group average **(column 14:line 50 – column 15:line 17, toner levels are measured using a moving window of 'N' samples for each segment and the average reading is determined)**;

if the group average is less than the report level, setting the report level to the group average **(column 14:line 62 – column 15:line 2, N samples are taken repeatedly, and their group average is used to determine the current level in order to maintain a level of ink in the fountain. Column 14:lines 12-19, the current level of the ink is updated on the display 148)**;

averaging a subsequent group of toner level sensor readings to produce a subsequent group average **(column 15:lines 8-10, the process of averaging group toner levels is repeated for subsequent group levels by using a moving window of N samples)**;

and if the subsequent group average is less than the report level, setting the report level to the subsequent group average **(column 14:line 62 – column 15:line 2, N samples are taken repeatedly, and their group average is used to determine the current level in order to maintain**

a level of ink in the fountain. Column 14:lines 12-19, the current level of the ink is updated on

the display 148).

Regarding claim 16, Koehler teaches the method as recited in claim 13. See Koehler teachings wherein

the actions of averaging a group of toner sensor levels and setting the report level to the subsequent

group average are continually repeated **(column 14:line 62 – column 15:line 2, N samples are taken**

repeatedly, and their group average is used to determine the current level in order to maintain a

level of ink in the fountain. Column 14:lines 12-19, the current level of the ink is updated on the

display 148).

Regarding claim 18, Koehler teaches a print device, having computer-readable media with computer-

readable instructions for performing the method as recited in claim 13 **(see Koehler column 8:lines 10-**

20 illustrating program instructions).

Regarding claim 19, Koehler teaches a computer, having computer-readable media with computer-

readable instructions for performing the method as recited in claim 13 **(see Koehler column 8:lines 10-**

20 illustrating program instructions taking the form of a computer).

Regarding claim 42, Koehler teaches a system comprising:

    a sensor configured to sense the amount of a marking agent **(fig 1 & 8, ink fountain level sensor**

    28);

    a printer controller **(fig 6, controller 62)** configured to seed a report level of the marking agent

    (column 8:lines 10-15, controller 62 operates ink management system, which includes seeding

    a report level, column 13:lines 14-18);

    the printer controller further configured to successively receive and average groups of readings from

    the sensor, and if the average of any group of readings is less than the report level, to set the report

    level to that average **(column 14:line 62 – column 15:line 2, in the ink management system**

operated by the controller 62, N samples are taken repeatedly, and their group average is used

to determine the current level in order to maintain a level of ink in the fountain. Column

14:lines 12-19, the current level of the ink is updated on the display 148 accordingly).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-3, 5-12, 14, 20-21, 23-41 & 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Koehler (US 6,619,206) & Barber (User Experience, not Metrics: What is an Outlier and How do I Account for One?).

Regarding claim 1, Koehler teaches, upon powering up a print device or replacing a toner cartridge

(column 12:lines 55-57 & fig 11, ink management is started with start-up), a method comprising:

seeding a toner report level **(column 13:lines 14-18, upon start-up, the ink level is updated on**

the display);

averaging a group of toner level sensor readings to produce a group average **(column 14:line 50 –**

column 15:line 17, toner levels are measured using a moving window of 'N' samples for each

segment and the average reading is determined);

if the group average is less than the report level, setting the report level to the group average

(column 14:line 62 – column 15:line 2, N samples are taken repeatedly, and their group

average is used to determine the current level in order to maintain a level of ink in the

fountain. column 14:lines 12-19, the current level of the ink is updated on the display 148);

averaging a subsequent group of toner level sensor readings to produce a subsequent group

average **(column 15:lines 8-10, the process of averaging group toner levels is repeated for**

subsequent group levels by using a moving window of N samples);

and if the subsequent group average is less than the report level, setting the report level to the subsequent group average (**column 14:line 62 – column 15:line 2, N samples are taken repeatedly, and their group average is used to determine the current level in order to maintain a level of ink in the fountain. column 14:lines 12-19, the current level of the ink is updated on the display 148**).

Koehler does not teach when producing a group average from a subsequent group of toner level sensor readings, doing so by selecting each reading being within a prescribed percent of the report level.

However, Barber teaches a statistical method for eliminating unwanted measurements that fall outside a prescribed percent (page 2, *What's an Outlier?*)

Accordingly, it would have been obvious to one skilled in the art at the time of the invention to have used the outlier elimination as taught by Barber in the print device system taught by Koehler, because it removes measurement errors or other anomalies which should not be considered for reporting the level.

Regarding claim 2, Koehler & Barber teach a method as recited in claim 1. Koehler and Barber do not teach expressly setting a report value to the highest of multiple sensor readings.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to setting a report value to the highest of multiple readings. Applicant has not disclosed that setting a report value to the highest of multiple readings provides an advantage, is used for a particular purpose or solves a stated problem beyond what Koehler teaches. One of ordinary skill in the art, furthermore, would have expected Applicant's invention to perform equally well with seeding the report level as taught by Koehler and Barber or setting a report value to the highest value of multiple readings because both perform the same function of providing an initial toner level that subsequent operations will decrease.

Therefore, it would have been obvious to one of ordinary skill in this art to modify the seeding a report level as taught by Koehler and Barber with setting a report value to the highest value of multiple readings to obtain the invention as specified in claim 2.

Regarding claim 3, the claim rejection of claim 1 is representative of claim 3. See Koehler teachings wherein the actions of averaging a group of toner sensor levels and setting the report level to the subsequent group average are continually repeated (**column 14:line 62 – column 15:line 2, N samples are taken repeatedly, and their group average is used to determine the current level in order to maintain a level of ink in the fountain. Column 14:lines 12-19, the current level of the ink is updated on the display 148**).

Regarding claim 5 the claim rejection of claim 1 is representative of claim 5. See Koehler teachings of a method wherein averaging further comprises: receiving toner level sensor readings that are pushed from the toner level sensor each time a change occurs in the sensed reading (**column 15:lines 9-11, a moving average includes each time a change occurs in the reading**).

Regarding claim 6 the claim rejection of claim 1 is representative of claim 6. See Koehler teachings of a method wherein averaging further comprises: receiving toner level sensor readings that are pulled from the toner level sensor at a preset interval (**column 15:lines 7-11, readings are taken at a moving N-length interval or at fixed length intervals, each of which are preset**).

Regarding claim 7 the claim rejection of claim 6 is representative of claim 7. See Koehler teachings of a method wherein the preset interval is a temporal interval (**column 14:lines 50-51, samples are periodically taken**).

Regarding claim 8 the claim rejection of claim 6 is representative of claim 8. See Koehler teachings of a method wherein the preset interval is an event-based interval (**column 12:line 66 – column 13:line 2 & column 13:lines 18-21, the selection of an "auto" button to start the auto mode is an event that starts up the preset interval**).

Regarding claim 9, the claim rejection of claim 1 is representative of claim 9. See Koehler teachings of a method further comprising: reporting the report level upon request **(column 11:lines 14-19, display 148 displays the report level, and is accessible by the user via the control panel 140 during any request period involving the user's desire to see the report level)**.

Regarding claim 10, the claim rejection of claim 1 is representative of claim 10. See Koehler teachings of a method further comprising: reporting the report level automatically upon a preset interval **(column 14:lines 14-19, the report level is reported automatically after each ink feed process cycle)**.

Regarding claim 11, Koehler & Barber teach a print device, having computer-readable media with computer-readable instructions for performing the method as recited in claim 1 **(see Koehler column 8:lines 10-20 illustrating program instructions)**.

Regarding claim 12, Koehler & Barber teach a computer, having computer-readable media with computer-readable instructions for performing the method as recited in claim 1 **(see Koehler column 8:lines 10-20 illustrating program instructions taking the form of a computer)**.

Regarding claim 14, Koehler teaches a method as recited in claim 13, but does not teach wherein each toner level sensor reading in the subsequent group of toner level sensor readings is within a prescribed percent of the report level.

However, Barber teaches a statistical method for eliminating unwanted measurements that fall outside a prescribed percent **(page 2, *What's an Outlier?*)**

Accordingly, it would have been obvious to one skilled in the art at the time of the invention to have used the outlier elimination as taught by Barber in the print device system taught by Koehler, because it removes measurement errors or other anomalies which should not be considered for reporting the level.

Regarding claim 20, Koehler teaches a method comprising:

receiving N readings from a toner level sensor **(column 14:line 50 – column 15:line 17, toner levels are measured using a moving window of 'N' samples for each segment);**

receiving M readings from the toner level sensor **(column 14:line 50 – column 15:line 17, toner levels are measured using a moving window of 'N' samples for each segment. In this case, M is equal to the 'N' samples taught by Koehler);**

calculating an M reading average **(column 14:line 50 – column 15:line 17, toner levels are measured using a moving window of 'N' samples for each segment and the average reading is determined);**

if the M reading average is less than the report value, setting the report value to the M reading average **(column 14:line 62 – column 15:line 2, N samples are taken repeatedly, and their group average is used to determine the current level in order to maintain a level of ink in the fountain. Column 14:lines 12-19, the current level of the ink is updated on the display 148);**

receiving Q readings from the toner level sensor, **(column 14:line 50 – column 15:line 17, toner levels are measured using a moving window of 'N' samples for each segment. In this case, Q is equal to the 'N' samples taught by Koehler);**

calculating a Q reading average **(column 14:line 50 – column 15:line 17, toner levels are measured using a moving window of 'N' samples for each segment and the average reading is determined);**

and if the Q reading average is less than the report value, setting the report value to the Q reading average **(column 14:line 62 – column 15:line 2, N samples are taken repeatedly, and their group average is used to determine the current level in order to maintain a level of ink in the fountain. Column 14:lines 12-19, the current level of the ink is updated on the display 148);**

Koehler does not teach when receiving Q readings, doing so by selecting each reading being within a prescribed percent of the report value.

However, Barber teaches a statistical method for eliminating unwanted measurements that fall outside a prescribed percent **(page 2, *What's an Outlier?)***

Accordingly, it would have been obvious to one skilled in the art at the time of the invention to have used the outlier elimination as taught by Barber in the print device system taught by Koehler, because it removes measurement errors or other anomalies which should not be considered for reporting the level.

Furthermore, Koehler and Barber do not teach expressly setting a report value to the highest of the N readings.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to setting a report value to the highest of the N readings. Applicant has not disclosed that setting a report value to the highest of the N readings provides an advantage, is used for a particular purpose or solves a stated problem beyond what Koehler and Barber teach. One of ordinary skill in the art, furthermore, would have expected Applicant's invention to perform equally well with seeding the report level as taught by Koehler or setting a report value to the highest value of N readings because both perform the same function of providing an initial toner level that subsequent operations will decrease.

Therefore, it would have been obvious to one of ordinary skill in this art to modify the seeding a report level as taught by Koehler and Barber with setting a report value to the highest value of N readings to obtain the invention as specified in claim 20.

Regarding claim 21, the claim rejection of claim 20 is representative of claim 21. See Koehler teachings wherein receiving Q readings from the toner level sensor, wherein each of the readings is within a prescribed percent of the report value; calculating a Q reading average; and if the Q reading average is less than the report value, setting the report value to the Q reading average are continually repeated **(column 14:line 62 – column 15:line 2, N samples are taken repeatedly, and their group average is used to determine the current level in order to maintain a level of ink in the fountain. Column 14:lines 12-19, the current level of the ink is updated on the display 148).**

Regarding claim 23, the claim rejection of claim 20 is representative of claim 23. See Koehler teachings of a method wherein receiving readings further comprises: pushing sensed values from the toner level

sensor each time a change occurs in the sensed value **(column 15:lines 9-11, a moving average includes each time a change occurs in the reading)**.

Regarding claim 24, the claim rejection of claim 20 is representative of claim 24. See Koehler teachings of a method wherein receiving readings further comprises: pulling sensed values from the toner level sensor at a preset interval **(column 15:lines 7-11, readings are taken at a moving N-length interval or at fixed length intervals, each of which are preset)**.

Regarding claim 25, the claim rejection of claim 24 is representative of claim 25. See Koehler teachings of a method wherein the preset interval is a temporal interval **(column 14:lines 50-51, samples are periodically taken)**.

Regarding claim 26, the claim rejection of claim 24 is representative of claim 26. See Koehler teachings of a method wherein the preset interval is an event-based interval **(column 12:line 66 – column 13:line 2 & column 13:lines 18-21, the selection of an "auto" button to start the auto mode is an event that starts up the preset interval)**.

Regarding claim 27, the claim rejection of claim 20 is representative of claim 27. See Koehler teachings of a method further comprising: reporting the report level upon request **(column 11:lines 14-19, display 148 displays the report level, and is accessible by the user via the control panel 140 during any request period involving the user's desire to see the report level)**.

Regarding claim 28, the claim rejection of claim 20 is representative of claim 28. See Koehler teachings of a method further comprising: reporting the report level automatically upon a preset interval **(column 14:lines 14-19, the report level is reported automatically after each ink feed process cycle)**.

Regarding claim 29, the claim rejection of claim 28 is representative of claim 29. See Koehler wherein the preset interval is a temporal interval **(column 14:lines 14-19, the report level is reported automatically after each ink feed process cycle. Because the report level is temporary until a change in the system, the reporting of the level is also temporary).**

Regarding claim 30, the claim rejection of claim 28 is representative of claim 30. See Koehler wherein the preset interval is an event based interval **(column 14:lines 14-19, the report level is reported automatically after each new job).**

Regarding claim 31, Koehler & Barber teach the method as recited in claim 20.

Koehler & Barber do not teach expressly wherein the prescribed percent is 10 percent.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to prescribed the percent as 10 percent. Applicant has not disclosed that prescribing the percent as 10 percent provides an advantage, is used for a particular purpose or solves a stated problem beyond what is taught by Koehler and Barber. One of ordinary skill in the art, furthermore, would have expected Applicant's invention to perform equally well with either the elimination of unwanted measurements that fall outside a prescribed percent taught by Koehler and Barber or the prescribed percent as 10 percent because each method is statistically significant in eliminating outlying sensor readings.

Therefore, it would have been obvious to one of ordinary skill in this art to modify Koehler and Barber with a prescribed 10 percent to obtain the invention as specified in claim 31.

Regarding claim 32, Koehler & Barber teach the method as recited in claim 20.

Koehler & Barber do not teach expressly wherein N, M and Q each equals 8.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to set N, M and Q each equal to 8. Applicant has not disclosed setting N, M and Q each to equal 8 provides an advantage, is used for a particular purpose or solves a stated problem beyond what is taught by Koehler and Barber. One of ordinary skill in the art, furthermore, would have expected Applicant's

invention to perform equally well with either N sample-length taught by Koehler and Barber or the 8

sample-length because each method is large enough that the average closely represents the actual

amount of toner present in the toner cartridge, but is not so large that a point of diminishing returns is

reached regarding the accuracy of the average.

Therefore, it would have been obvious to one of ordinary skill in this art to modify Koehler and

Barber with setting N, M and Q each to equal 8 to obtain the invention as specified in claim 32.

Regarding claim 33, the claim rejection of claim 20 is representative of claim 33. See Koehler wherein

toner is any marking agent stored in a cartridge for use in a print device **(column 13:lines 14-15, toner is

ink in ink cartridge)**.

Regarding claim 34, Koehler & Barber teach a print device, having computer-readable media with

computer-readable instructions for performing the method as recited in claim 20 **(see Koehler column

8:lines 10-20 illustrating program instructions)**.

Regarding claim 35, Koehler & Barber teach a computer, having computer-readable media with

computer-readable instructions for performing the method as recited in claim 20 **(see Koehler column

8:lines 10-20 illustrating program instructions taking the form of a computer)**.

Regarding claim 36, Koehler teaches a printer comprising:

   a consumable marking agent **(fig 3, ink 18)**;

   a sensor to sense the amount of marking agent **(fig 1 & 8, ink fountain level sensor 28)**;

   a printer controller **(fig 6, controller 62)** configured to seed a report level of the marking agent

   **(column 8:lines 10-15, controller 62 operates ink management system, which includes seeding

   a report level, column 13:lines 14-18)**;

   the printer controller further configured to receive and average a group of readings from the sensor

   and, if the group average is less than the report level, to set the report level to the group average

(column 14:line 62 – column 15:line 2, the ink management system controlled by the controller 62, repeatedly uses N samples that are received, averages each group to determine the current level in order to maintain a level of ink in the fountain. Column 14:lines 12-19, the current level of the ink is updated on the display 148 repeatedly whether the average is less or more than the report level);

the printer controller further configured to receive and average a subsequent group of readings from the sensor, and, if the subsequent group average is less than the report level, to set the report level to the subsequent group average **(column 14:line 62 – column 15:line 2, in the ink management system operated by the controller 62, N samples are taken repeatedly, and their group average is used to determine the current level in order to maintain a level of ink in the fountain. Column 14:lines 12-19, the current level of the ink is updated on the display 148 accordingly).** Koehler does not teach wherein each reading of the subsequent group of readings is within a prescribed percent of the report level.

However, Barber teaches a statistical method for eliminating unwanted measurements that fall outside a prescribed percent **(page 2, *What's an Outlier?*)**

Accordingly, it would have been obvious to one skilled in the art at the time of the invention to have used the outlier elimination as taught by Barber in the print device system taught by Koehler, because it removes measurement errors or other anomalies which should not be considered for reporting the level.

Regarding claim 37, the claim rejection of claim 36 is representative of claim 37. See Koehler wherein the printer controller is further configured to continually receive and average subsequent groups of readings from the sensor, each reading of the subsequent groups of readings being within a prescribed percent of the report level, and, if any subsequent group average is less than the report level, to set the report level to that subsequent group average **(column 14:line 62 – column 15:line 2, in the ink management system operated by the controller 62, N samples are taken repeatedly, and their group average is used to determine the current level in order to maintain a level of ink in the**

fountain. Column 14:lines 12-19, the current level of the ink is updated on the display 148

accordingly).

Regarding claim 38, Koehler & Barber teach a printer as recited in claim 36.

Koehler and Barber do not teach expressly setting a report value to the highest of multiple sensor

readings.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to

setting a report value to the highest of multiple readings. Applicant has not disclosed that setting a report

value to the highest of multiple readings provides an advantage, is used for a particular purpose or solves

a stated problem beyond what Koehler teaches. One of ordinary skill in the art, furthermore, would have

expected Applicant's invention to perform equally well with seeding the report level as taught by Koehler

and Barber or setting a report value to the highest value of multiple readings because both perform the

same function of providing an initial toner level that subsequent operations will decrease.

Therefore, it would have been obvious to one of ordinary skill in this art to modify the seeding a

report level as taught by Koehler and Barber with setting a report value to the highest value of multiple

readings to obtain the invention as specified in claim 38.

Regarding claim 39, Koehler teaches a computer coupled to a print device (**column 8:lines 10-20**

illustrating program instructions for a controller 62 of an ink management system that takes form

on a computer to operate a printing device), the print device comprising a consumable marking agent

(**fig 3, ink 18**) and a sensor to sense the amount of marking agent (**fig 1 & 8, ink fountain level sensor**

28), the computer comprising:

a printer controller (**fig 6, controller 62**) configured to seed a report level of the marking agent

(**column 8:lines 10-15, controller 62 operates ink management system, which includes seeding**

a report level, column 13:lines 14-18);

to receive and average a group of readings from the sensor and, if the group average is less than the

report level, to set the report level to the group average (**column 14:line 62 – column 15:line 2, the**

ink management system controlled by the controller 62, repeatedly uses N samples that are

received, averages each group to determine the current level in order to maintain a level of ink

in the fountain. Column 14:lines 12-19, the current level of the ink is updated on the display

148 repeatedly whether the average is less or more than the report level);

the printer controller further configured to receive and average a subsequent group of readings from

the sensor, and, if the subsequent group average is less than the report level, to set the report level to

the subsequent group average **(column 14:line 62 – column 15:line 2, in the ink management**

system operated by the controller 62, N samples are taken repeatedly, and their group average

is used to determine the current level in order to maintain a level of ink in the fountain.

Column 14:lines 12-19, the current level of the ink is updated on the display 148 accordingly).

Koehler does not teach wherein each reading of the subsequent group of readings is within a prescribed

percent of the report level.

However, Barber teaches a statistical method for eliminating unwanted measurements that fall

outside a prescribed percent **(page 2, *What's an Outlier?*)**

Accordingly, it would have been obvious to one skilled in the art at the time of the invention to

have used the outlier elimination as taught by Barber in the print device system taught by Koehler,

because it removes measurement errors or other anomalies which should not be considered for reporting

the level.

Regarding claim 40, the claim rejection of claim 39 is representative of claim 37. See Koehler wherein

the printer controller is further configured to continually receive and average subsequent groups of

readings from the sensor, each reading of the subsequent groups of readings being within a prescribed

percent of the report level, and, if any subsequent group average is less than the report level, to set the

report level to that subsequent group average **(column 14:line 62 – column 15:line 2, in the ink**

management system operated by the controller 62, N samples are taken repeatedly, and their

group average is used to determine the current level in order to maintain a level of ink in the

fountain. Column 14:lines 12-19, the current level of the ink is updated on the display 148

accordingly).

Regarding claim 41, Koehler and Barber teach a computer as recited in claim 39.

Koehler and Barber do not teach expressly setting a report value to the highest of multiple sensor

readings.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to

setting a report value to the highest of multiple readings. Applicant has not disclosed that setting a report

value to the highest of multiple readings provides an advantage, is used for a particular purpose or solves

a stated problem beyond what Koehler teaches. One of ordinary skill in the art, furthermore, would have

expected Applicant's invention to perform equally well with seeding the report level as taught by Koehler

and Barber or setting a report value to the highest value of multiple readings because both perform the

same function of providing an initial toner level that subsequent operations will decrease.

Therefore, it would have been obvious to one of ordinary skill in this art to modify the seeding a

report level as taught by Koehler and Barber with setting a report value to the highest value of multiple

readings to obtain the invention as specified in claim 41.

Regarding claim 43, Koehler teaches a system as recited in claim 42, but does not teach wherein every

group of readings except for the first group of readings is made up of readings which are all within a

prescribed percent of the current report level.

However, Barber teaches a statistical method for eliminating unwanted measurements that fall

outside a prescribed percent **(page 2, What's an Outlier?)**

Accordingly, it would have been obvious to one skilled in the art at the time of the invention to

have used the outlier elimination as taught by Barber in the print device system taught by Koehler,

because it removes measurement errors or other anomalies which should not be considered for reporting

the level.

Furthermore, Koehler & Barber do not teach expressly using the prescribed percentage for every group of readings except the first group.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use the prescribed percentage for every group of readings except the first group. Applicant has not disclosed that using the prescribed percentage for every group of readings except the first group provides an advantage, is used for a particular purpose or solves a stated problem beyond what Koehler teaches. One of ordinary skill in the art, furthermore, would have expected Applicant's invention to perform equally well with using of the outlier-eliminating method for all groups as taught by Koehler and Barber or using the prescribed percentage for every group of readings except the first group because both perform the same function of maintaining accurate toner levels.

Therefore, it would have been obvious to one of ordinary skill in this art to modify the using of the outlier-eliminating method for all groups as taught by Koehler And Barber with using the prescribed percentage for every group of readings to obtain the invention as specified in claim 43.

Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Koehler (US 6,619,206).
Regarding claim 15, Koehler teaches a method as recited in claim 13.

Koehler does not teach expressly setting a report value to the highest of multiple sensor readings.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to setting a report value to the highest of multiple readings. Applicant has not disclosed that setting a report value to the highest of multiple readings provides an advantage, is used for a particular purpose or solves a stated problem beyond what Koehler teaches. One of ordinary skill in the art, furthermore, would have expected Applicant's invention to perform equally well with seeding the report level as taught by Koehler or setting a report value to the highest value of multiple readings because both perform the same function of providing an initial toner level that subsequent operations will decrease.

Therefore, it would have been obvious to one of ordinary skill in this art to modify the seeding a report level as taught by Koehler with setting a report value to the highest value of multiple readings to obtain the invention as specified in claim 15.

Claims 4 & 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Koehler (US 6,619,206) & Barber (User Experience, not Metrics: What is an Outlier and How do I Account for One?) as applied to claims 1 & 20 above, and further in view of Garr et al. (US 5,802,420).

Regarding claim 4, Koehler & Barber teach a method as recited in claim 1, but do not teach a method further comprising: prior to seeding the toner report level, setting the report level to an arbitrary value.

However, Garr et al., teach setting the ink level to an arbitrary level **(column 12:lines 21-31, an "unknown" designation is provided for ink levels after the cover is closed. Column 19:lines 13-36, the "unknown" state is provided in cases where an ink cartridge has been replaced).**

Accordingly, it would have been obvious to one skilled in the art at the time of the invention to have used the "unknown" designation as taught by Garr et al., in the method taught by Koehler & Barber, because it would allow the ink level to settle out without error after a cartridge change.

Regarding claim 22, Koehler & Barber teach a method as recited in claim 20, but do not teach a method further comprising: setting the report level to an arbitrary value upon powering up or replacing a cartridge.

However, Garr et al., teach setting the report level to an arbitrary value upon powering up or replacing a cartridge **(column 12:lines 21-31, an "unknown" designation is provided for ink levels after the cover is closed. Column 19:lines 13-36, the "unknown" state is provided in**

Accordingly, it would have been obvious to one skilled in the art at the time of the invention to have used the "unknown" designation as taught by Garr et al., in the method taught by Koehler & Barber, because it would allow the ink level to settle out without error after a cartridge change.

Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Koehler (US 6,619,206) & Garr et al. (US 5,802,420).

Regarding claim 17, Koehler teaches a method as recited in claim 13, but does not teach a method further comprising: prior to seeding the toner report level, setting the report level to an arbitrary value.
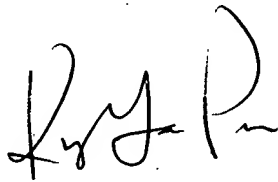
However, Garr et al., teach setting the ink level to an arbitrary level **(column 12:lines 21-31, an**

"unknown" designation is provided for ink levels after the cover is closed. Column 19:lines 13-36,

the "unknown" state is provided in cases where an ink cartridge has been replaced).

Accordingly, it would have been obvious to one skilled in the art at the time of the invention to

have used the "unknown" designation as taught by Garr et al., in the method taught by Koehler, because

it would allow the ink level to settle out without error after a cartridge change.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should

be directed to Kyle Pendergrass whose telephone number is **(571) 272-7438**. The examiner can normally

be reached on Monday-Friday 8:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, King

Poon can be reached on **(571) 272-7440**.

KING Y. POON
PRIMARY EXAMINER